

# MULTIPLE COMPACT DISC PLAYER

# DP-R896

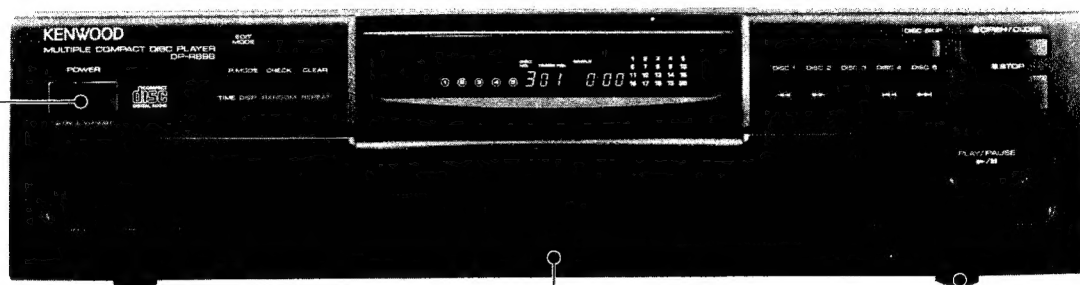
## SERVICE MANUAL

# KENWOOD

© 1995-11 PRINTED IN KOREA  
B51-5124-00 (K) 1583

Knob (POWER)  
(K27-2112-04)

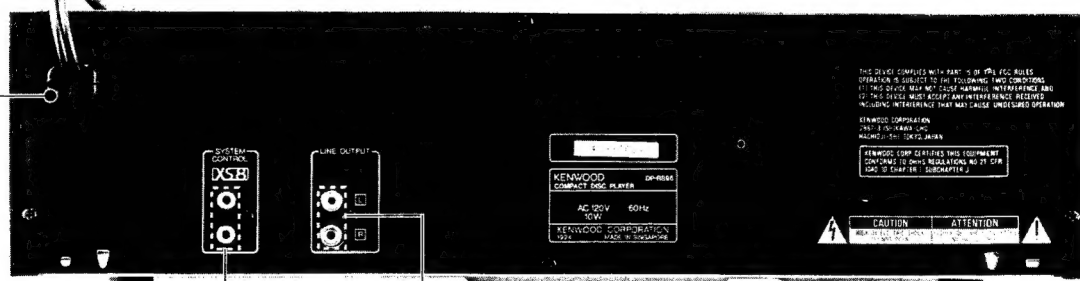
Metallic cabinet  
(A01-3103-11)



Panel assy  
(A60-0872-02)

Foot  
(J02-0366-15)

AC power cord \*  
(E30-)



Powercord bushing  
(J42-0083-05)

Miniature phone jack (2p)  
(E11-0188-05)

Phono jack (2p)  
(E63-0068-15)

In compliance with Federal Regulations, following are reproductions of labels on, or inside the product relating to laser product safety.

KENWOOD-Corp. certifies this equipment conforms to DHHS Regulations No. 21 CFR 1040. 10, Chapter 1, Subchapter J.

**DANGER : Laser radiation when open and interlock defeated.  
AVOID DIRECT EXPOSURE TO BEAM.**

\* Refer to parts list on page 22.

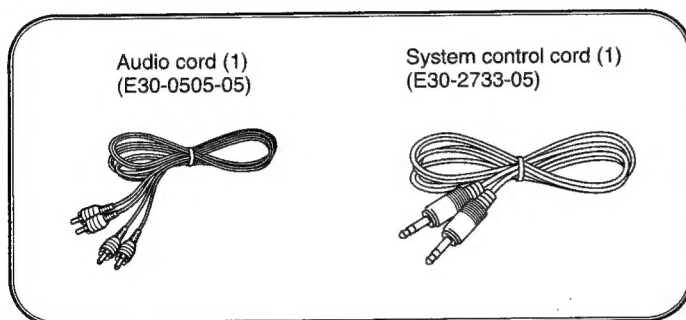
# DP-R896

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For "CIRCUIT DESCRIPTION", refer to the Service Manual of DP-R894.

### Accessories

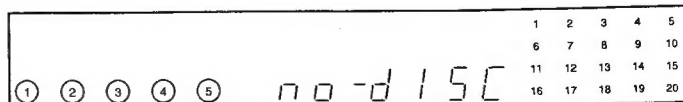


### Caution

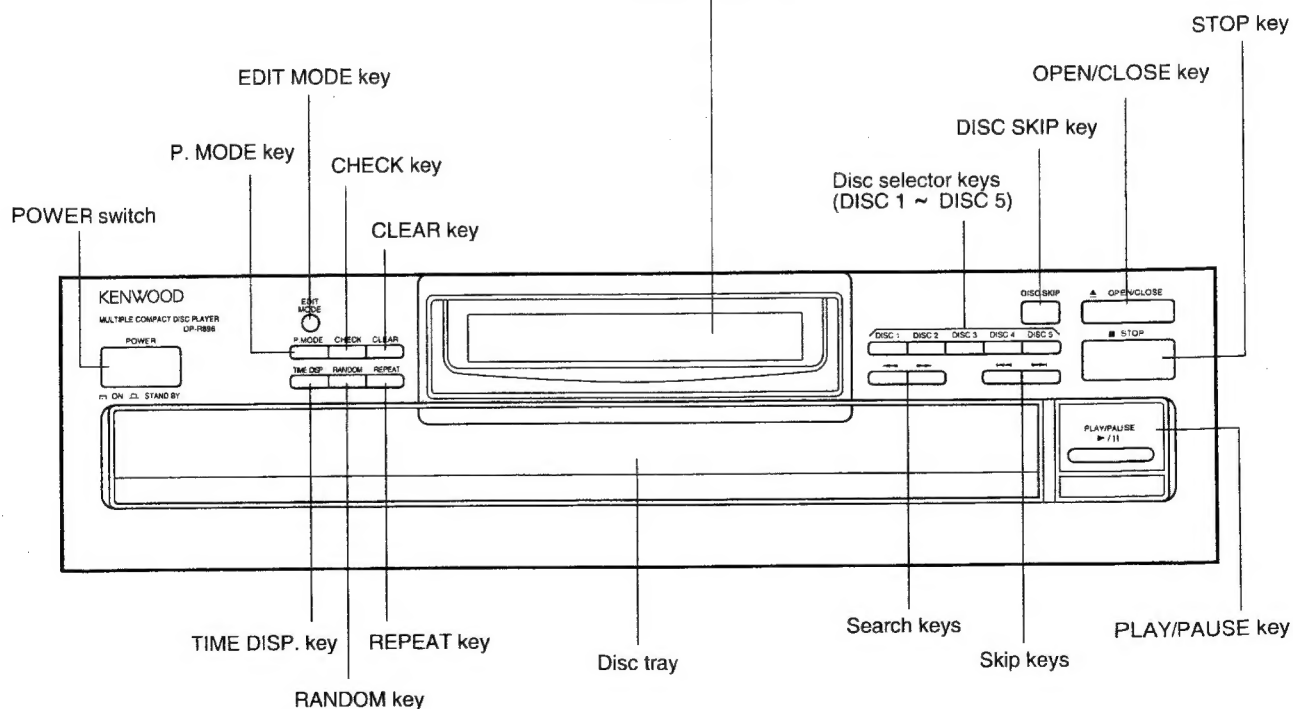
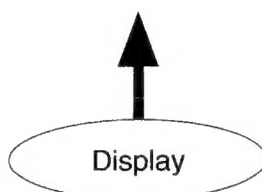
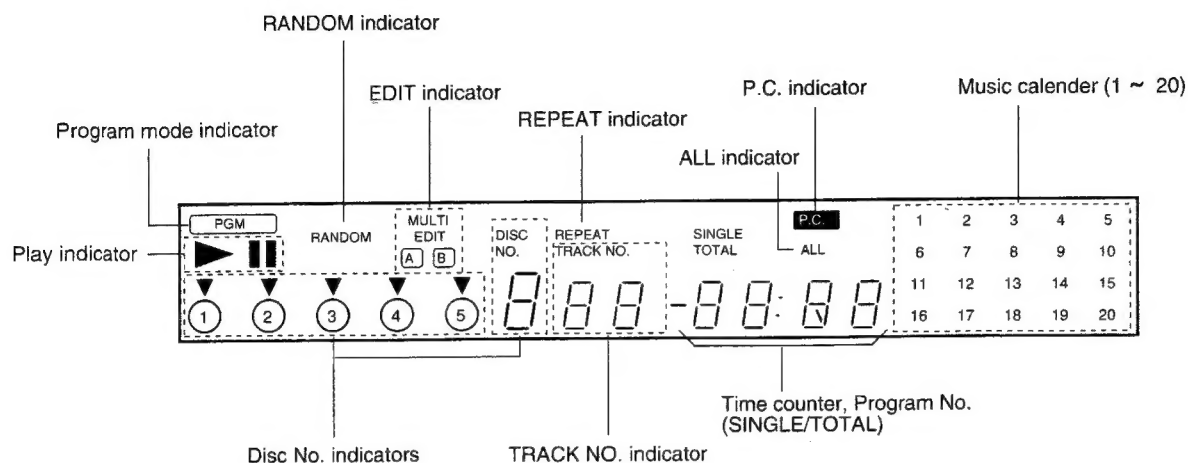
#### Note related to transportation and movement

Before transporting or moving this unit, carry out the following operations.

1. Turn the power ON but do not load a disc.
2. Wait a few seconds and verify that the display shown appears.  
Wait further a few seconds.
3. Turn the power OFF.



## CONTROLS



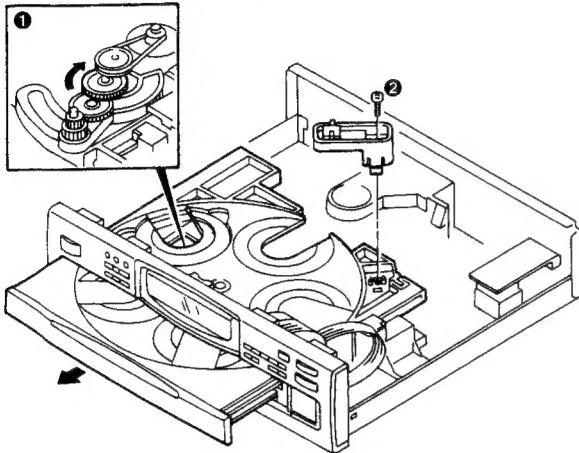
# DP-R896

## DISASSEMBLY FOR REPAIR

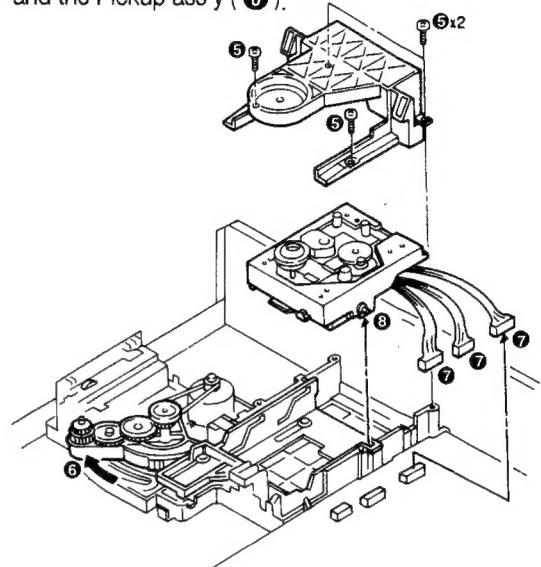
\* Remove the metallic cabinet before the following procedure.

### 1. How to Remove the Tray and Tray panel

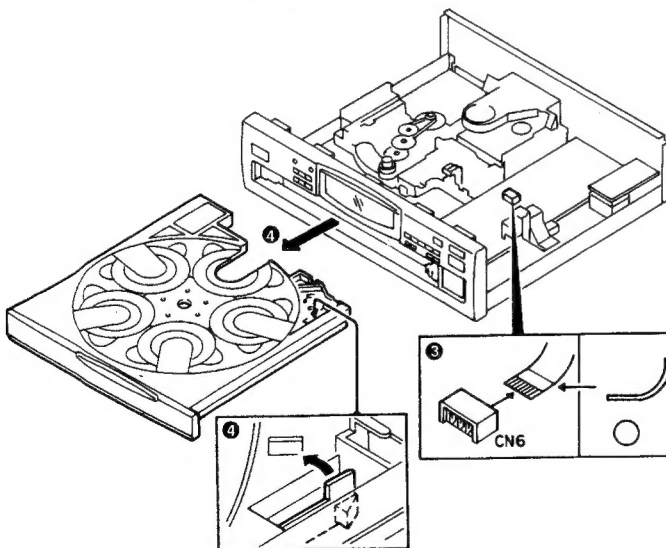
1. Turn the gear clockwise by hand ( ❶ ).
2. Remove the sensor ( ❷ ).



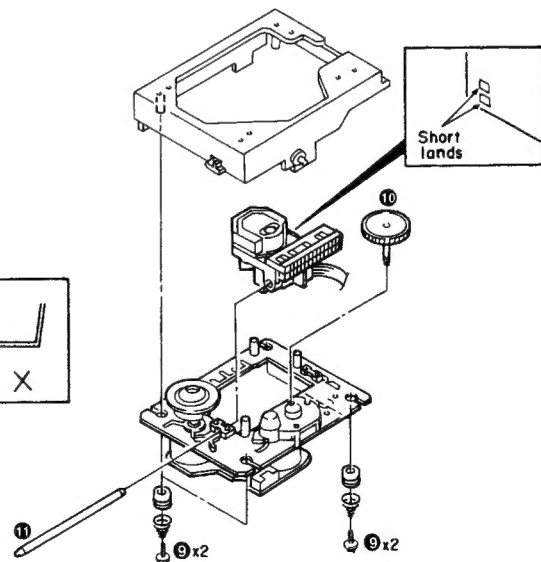
5. Remove screws ( ❺ ).
6. Move the gear ass'y to arrow mark ( ❻ ).
7. Remove connectors ( ❼ ) and the Pickup ass'y ( ❽ ).



3. Remove the flexible cable ( ❸ ).  
**NOTE :** Be careful of inserting the flexible cable as figure if reinsert it.
4. Pull out the rotary tray ( ❹ ).



8. Remove screws ( ❾ ) and pull out the pickup ass'y.
- NOTE :** short-circuit the short lands of the pickup before pulling out it .
9. Remove the gear ( ❿ ).
10. Pull out the shaft ( ⓫ ) and lift up the pickup.

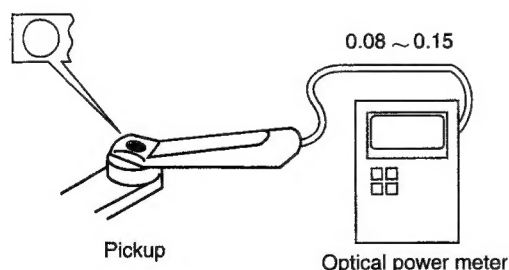


## ADJUSTMENT

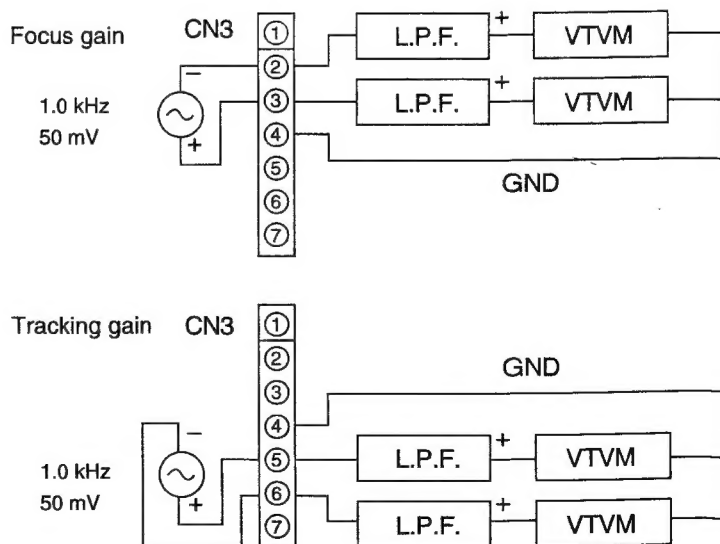
No.	ITEM	INPUT SET-TINGS	OUTPUT SETTINGS	PLAYER SETTINGS	ALIGNMENT POINTS	ALIGN FOR	FIG.
<b>Remove the clamper ass'y before step 1. And remount it after step 1.</b>							
1	LASER POWER	—	Set the sensor section of the optical power meter on the pickup lens.	With pressing the P.MODE key, turn the power on to enter the test mode. Press the CHECK key to check that the display is "03".	—	On the power from 0.08 to 0.15 mW, when the diffraction grating is correctly aligned with the RF level of 1.0Vp-p or more.	(a)
<b>Cancel test mode and open the tray to load the disc.</b>							
2	TRACKING ERROR	Test disc Type 4	Connect an oscilloscope as follows. CH1:RF (CN3-1) CH2:TE (CN3-6)	Load disc and set to test mode. Confirm the display is "03".	TE BALANCE VR4	Symmetry between upper and lower or $DC=0 \pm 0.025V$	(c)
3	FOCUS ERROR	Test disc Type 4	Connect an oscilloscope as follows. CH1:RF (CN3-1) CH2:TE (CN3-6)	Press the PLAY key. Confirm that the display is "05".	FE BALANCE VR1	Optimum eye pattern	(d)
4	FOCUS GAIN	Test disc Type 4 Apply signal of 1.0 kHz, 50mVrms to CN3 pin 2-3.	Connect a LPF to CN3 pin 2-3 to which connect an oscilloscope or AC voltmeters.	Press the PLAY key. Confirm that the display is "05".	FOCUS GAIN VR2	Two VTVMs should read the same value.	(e)
5	TRACKING GAIN	Test disc Type 4 Apply signal of 1.0 kHz, 50mVrms to CN3 pin 5-6.	Connect a LPF to CN3 pin 5-6 to which connect an oscilloscope or AC voltmeters.	Press the PLAY key. Confirm that the display is "05".	TRACKING GAIN VR3	Two VTVMs should read the same value.	(e)

Note:  
 Type 4 disc : SONY YEDS-18 Test Disc or equivalent.  
 LPF : Around 47 k $\Omega$  +390 pF or so.  
 Step 1 ~5 are in Test Mode.

### (a) Laser power

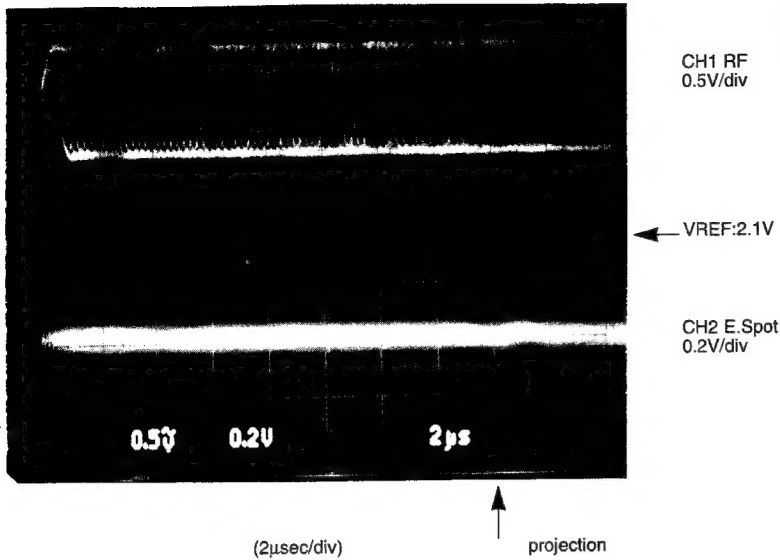


### (e) Focus Gain, Tracking Gain



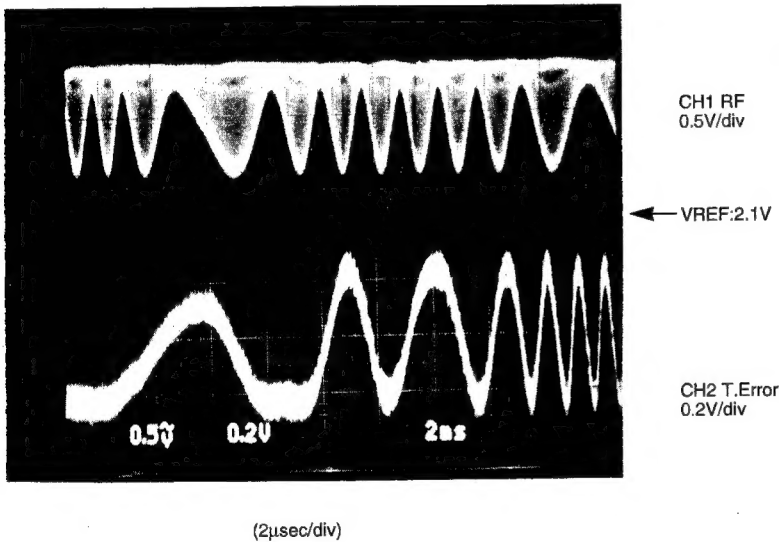
## ADJUSTMENT

FIG.(b)



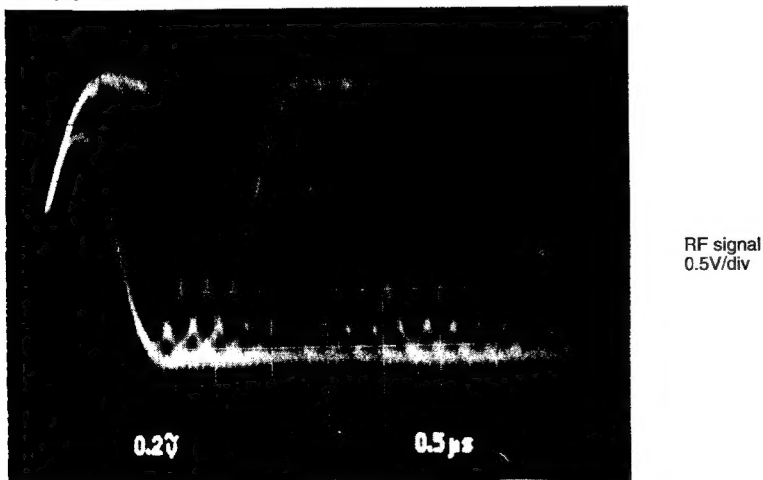
- RF signal and E.Spot signal in test mode ( PLAY ).
- If the diffraction grating has been adjusted properly, the influence of triggering is observed on the E.Spot waveform of approx. 18μs after RF signal in the form of a projection.

FIG.(c)



- RF signal and T.Error signal in test mode (Focusing ON ). ( Disc Type 4 ).
- Adjust T.Error so that the waveform is symmetrical above and below VREF(VR4).

FIG.(d)



- RF signal in test mode ( PLAY ).
- Perform the tangential and focusing offset adjustments so that each of the center cross points are focused into one point on the display. The crossing points above and below the center shall also be displayed clearly.



CD Player unit (NEC TYPE)  
(X32-262X-XX) 0-10 : K, P, X  
0-21 : Y

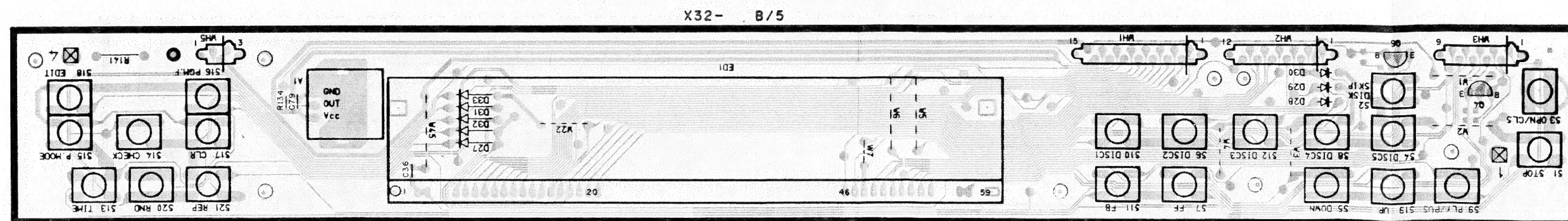
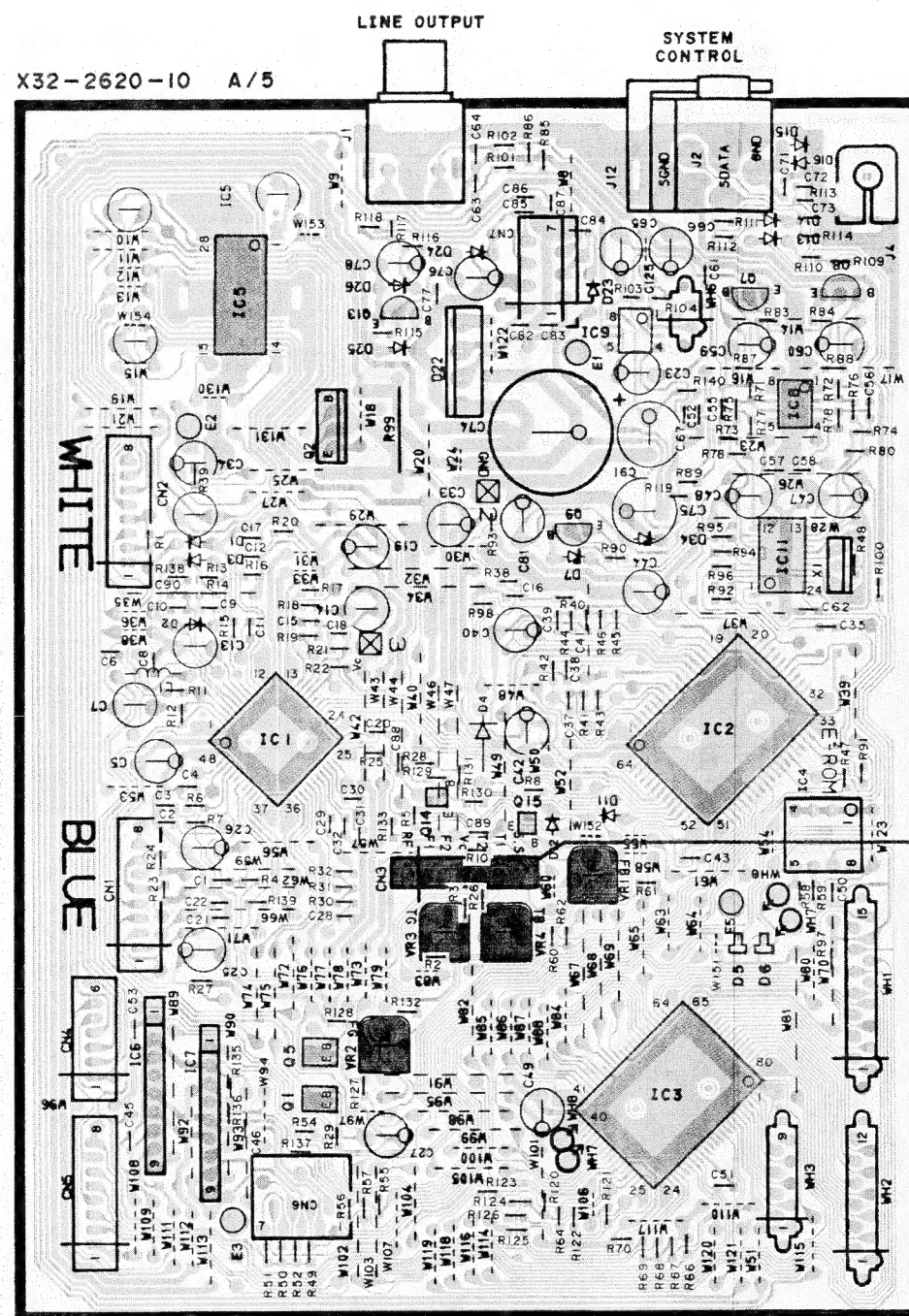
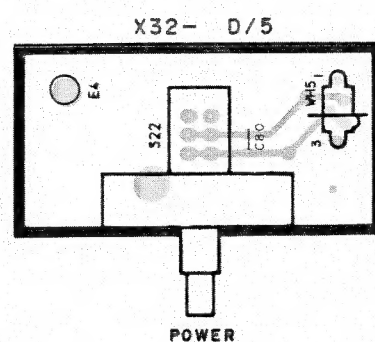


Figure 1 is a block diagram of the test setup. It shows an Audio Generator (AG) outputting a 1.0kHz, 50mVrms signal to a 7-pin connector labeled CN3. The signal is then split into two paths, each passing through an L.P.F. (Low Pass Filter) before being measured by an AC voltmeter.

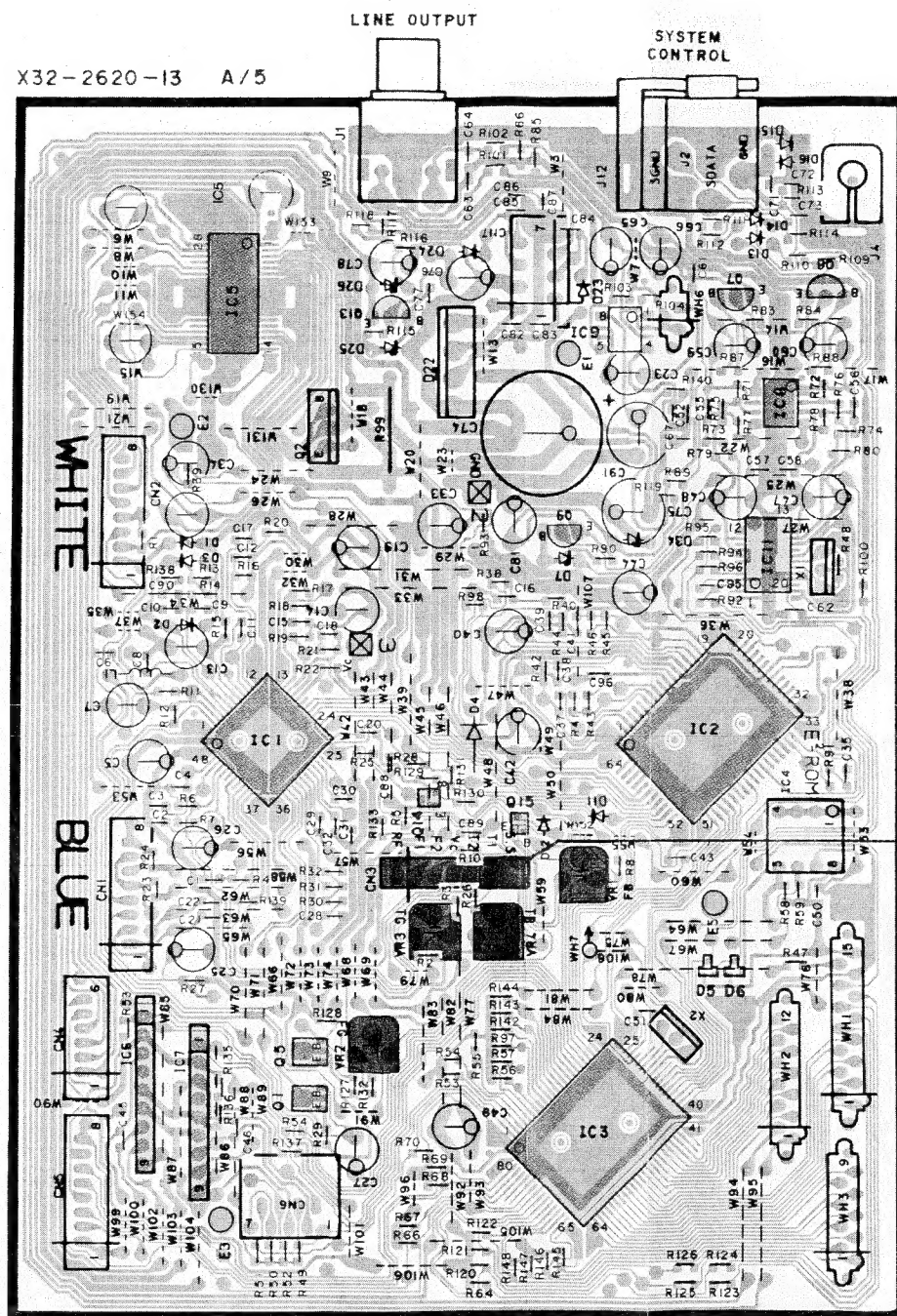
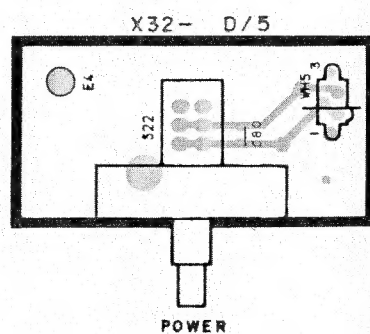
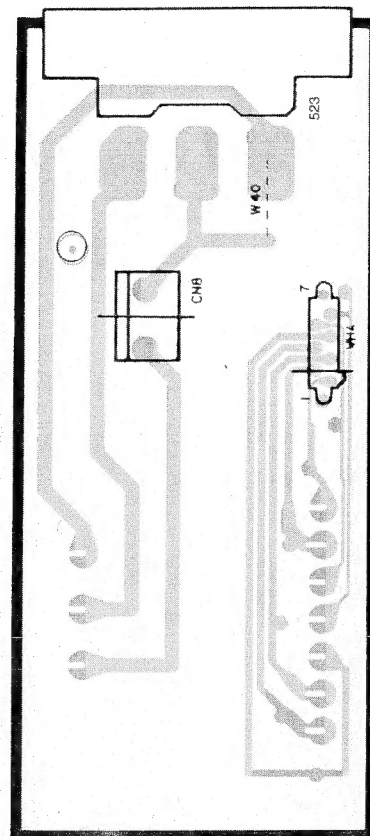
Diagram illustrating the setup for measuring the time delay of the T1 transition. A signal source (CN3) is connected to the oscilloscope. The signal source has seven channels (1 through 7). Channel 1 (CH1) is connected to the RF input, and Channel 2 (CH2) is connected to the T1 input. The oscilloscope displays the waveforms for both channels, showing a circular pattern.



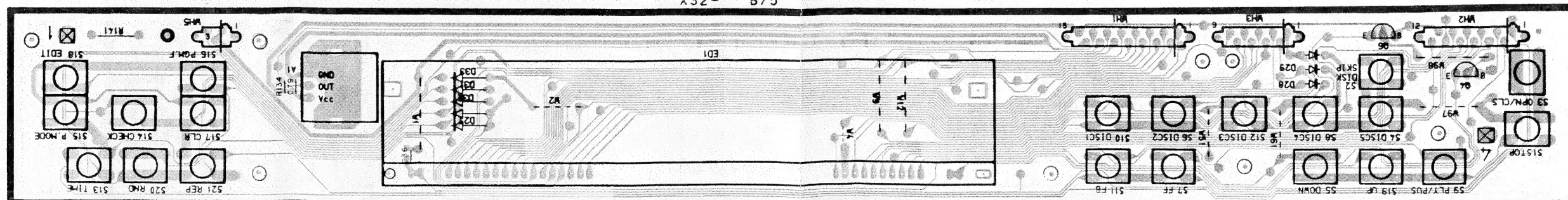
# PC BOARD(COMPONENT SIDE VIEW)

CD Player unit (MITSUBISHI TYPE)  
(X32-262X-XX) 0-13 : K, P, X  
0-24 : Y

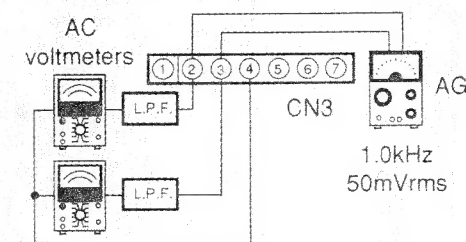
X32- C/5  
AC110-120V ↔ AC220-240V~



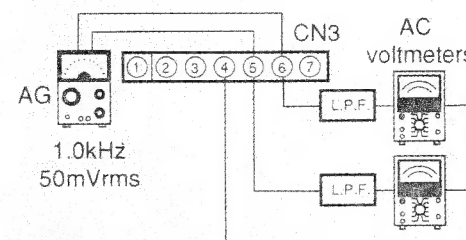
X32- B/5



(e) Focus gain : Two VTVMs should read the same value.

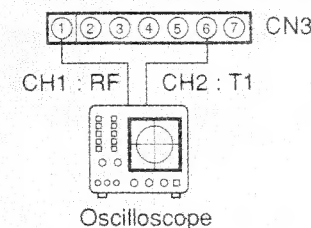


(e) Tracking gain : Two VTVMs should read the same value.



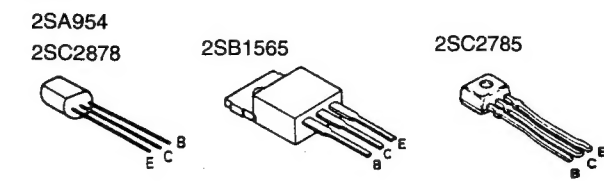
(c) Tracking error : Symmetry between upper and lower or  $DC=0 \pm 0.025V$

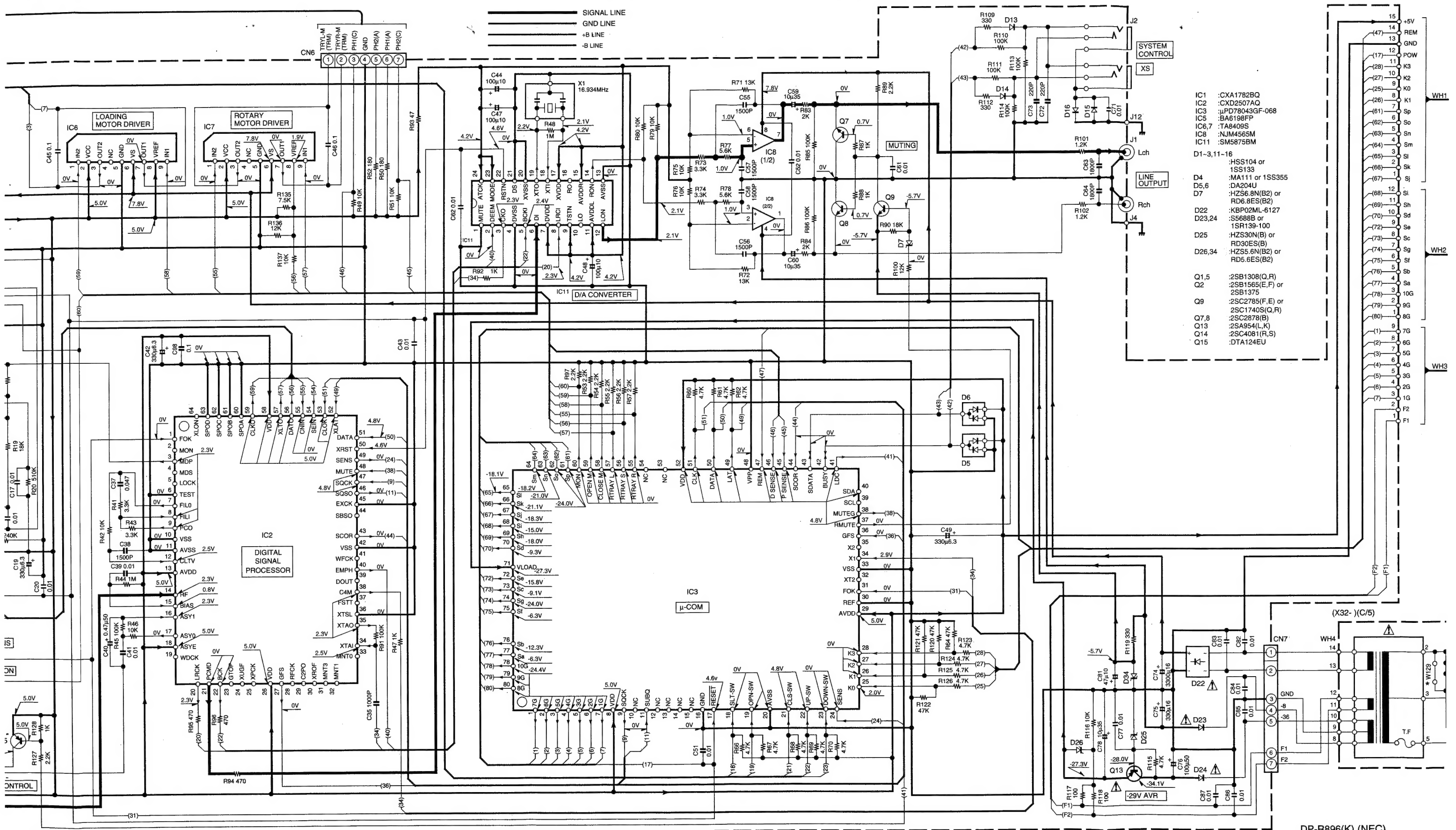
(d) Focus error : Optimum eye pattern



Refer to the schematic diagram for the value of resistors and capacitors.



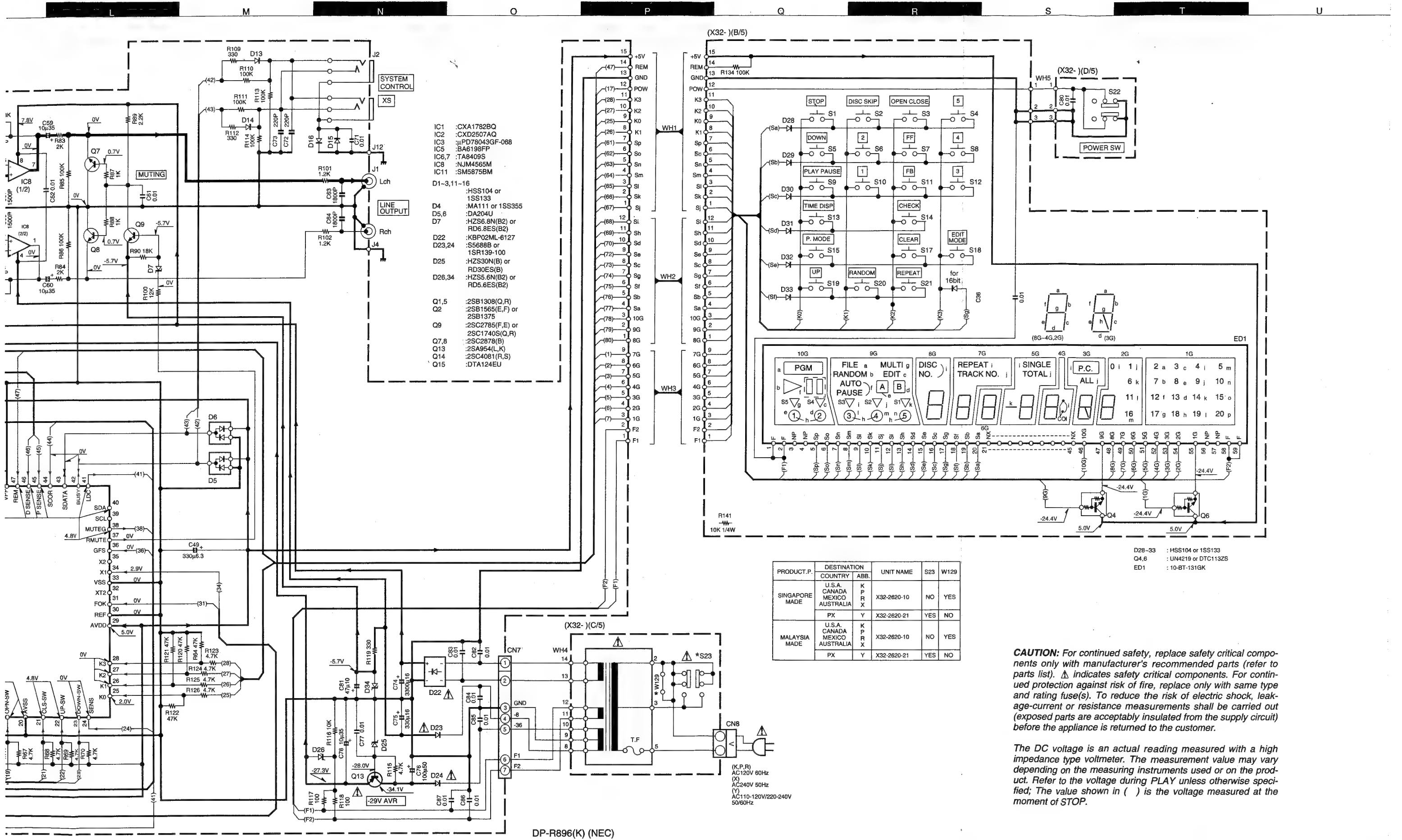




- IC1 :CX1782BQ  
IC2 :CXD2507AQ  
IC3 :PD78043GF-068  
IC5 :BA6198FP  
IC6,7 :TA8409S  
IC8 :NJM4565M  
IC11 :SM5875BM
- D1-3,11-16 :HSS104 or 1SS133  
D4 :MA111 or 1SS355  
D5,6 :DA204U  
D7 :HZS6.8N(B2) or RD6.8ES(B2)  
D22 :KBP02ML-6127  
D23,24 :S5688B or 1SR139-100  
D25 :HZS30N(B) or RD30ES(B)  
D26,34 :HZS5.6N(B2) or RD5.6ES(B2)
- Q1,5 :2SB1308(Q,R)  
Q2 :2SB1565(E,F) or 2SB1375  
Q9 :2SC2785(F,E) or 2SC1740S(Q,R)  
Q7,8 :2SC2878(B)  
Q13 :2SA954(L,K)  
Q14 :2SC4081(R,S)  
Q15 :DTA124EU

DP-R896(K) (NEC)

- 2SA954  
2SC2878  
2SB1565  
2SC2785  
2SC1740S  
DTA124EU  
2SC4081  
2SB1308  
UN4219  
2SB1375  
TA8409S  
NJM4565M  
DA204U  
SM5875BM

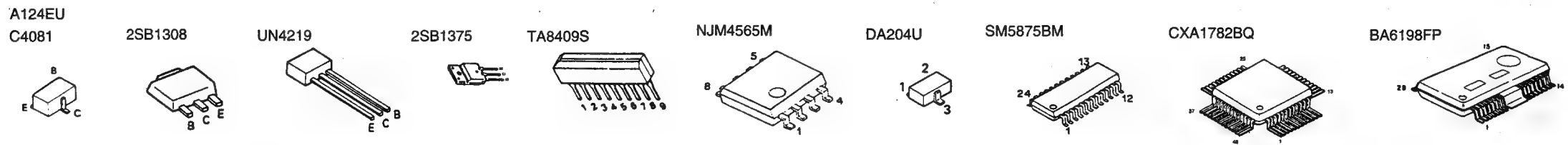


- IC1 :CXA1782BQ
- IC2 :CXD2507AQ
- IC3 :μPD78043GF-088
- IC5 :BA6198FP
- IC6,7 :TA8409S
- IC8 :NJM4565M
- IC11 :SM5875BM
- D1-3,11-16 :HSS104 or 1SS133
- D4 :MA1111 or 1SS355
- D5,6 :DA204U
- D7 :H2S6.8N(B2) or RD6.8ES(B2)
- D22 :KBP02ML-6127
- D23,24 :S5688B or 1SR139-100
- D25 :H2S30N(B) or RD30ES(B)
- D26,34 :H2S5.6N(B2) or RD5.6ES(B2)
- Q1,5 :2SB1308(Q,R)
- Q2 :2SB1565(E,F) or 2SB1375
- Q9 :2SC2785(F,E) or 2SC1740S(Q,R)
- Q7,8 :2SC2878(B)
- Q13 :2SA954(L,K)
- Q14 :2SC4081(R,S)
- Q15 :DTA124EU

PRODUCT P.	DESTINATION		UNIT NAME	S23	W129
	COUNTRY	ABB.			
SINGAPORE MADE	U.S.A.	K	X32-2620-10	NO	YES
	CANADA	P			
	MEXICO	R			
	AUSTRALIA	X			
MALAYSIA MADE	PX	Y	X32-2620-21	YES	NO
	U.S.A.	K			
	CANADA	P			
	MEXICO	R			
	AUSTRALIA	X			
	PX	Y			

**CAUTION:** For continued safety, replace safety critical components only with manufacturer's recommended parts (refer to parts list). ⚠ indicates safety critical components. For continued protection against risk of fire, replace only with same type and rating fuse(s). To reduce the risk of electric shock, leakage-current or resistance measurements shall be carried out (exposed parts are acceptably insulated from the supply circuit) before the appliance is returned to the customer.

The DC voltage is an actual reading measured with a high impedance type voltmeter. The measurement value may vary depending on the measuring instruments used or on the product. Refer to the voltage during PLAY unless otherwise specified; The value shown in ( ) is the voltage measured at the moment of STOP.

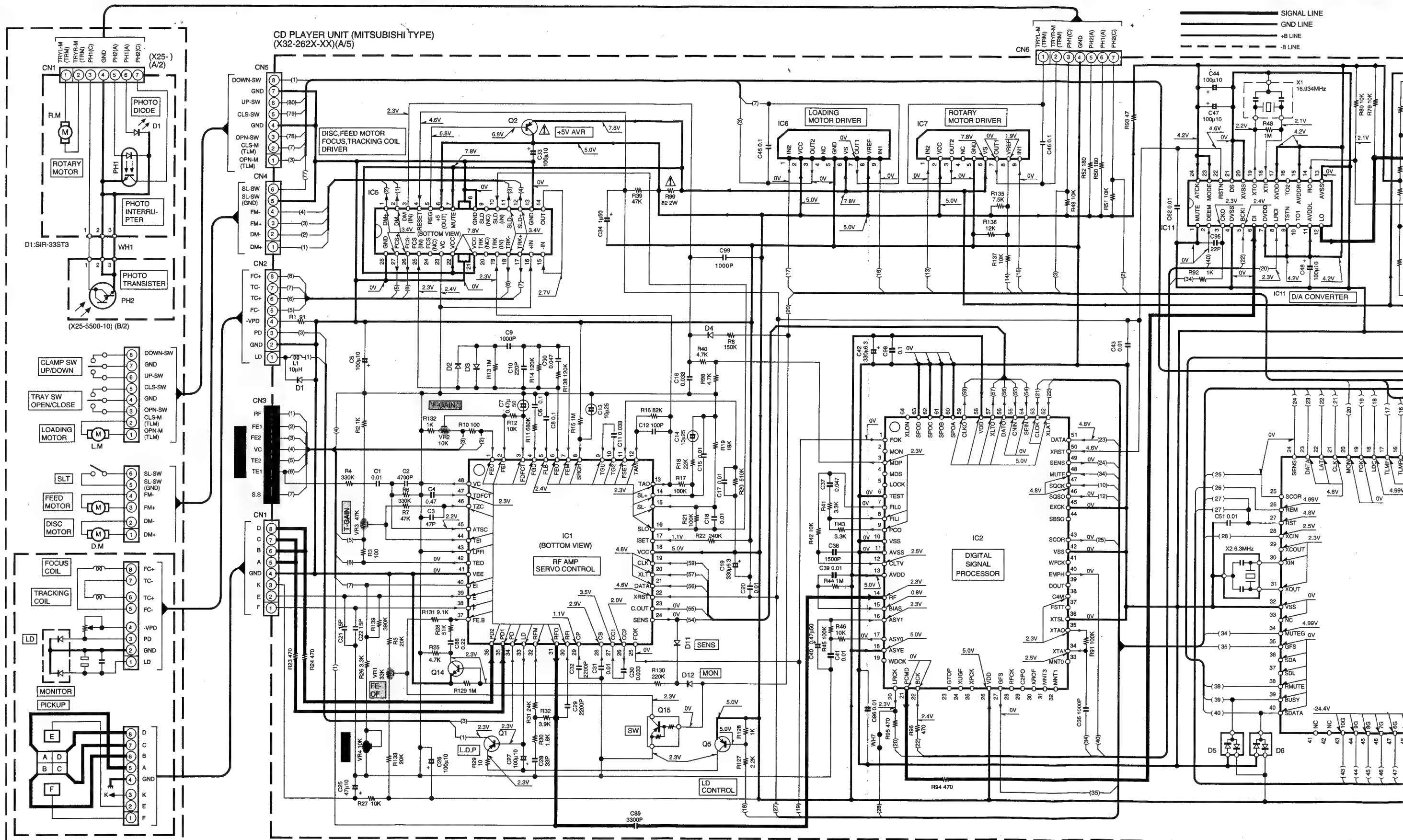


**DP-R896**  
KENWOOD

Y22-4450-10



CD PLAYER UNIT (MITSUBISHI TYPE)  
(X32-262X-XX)(A/5)

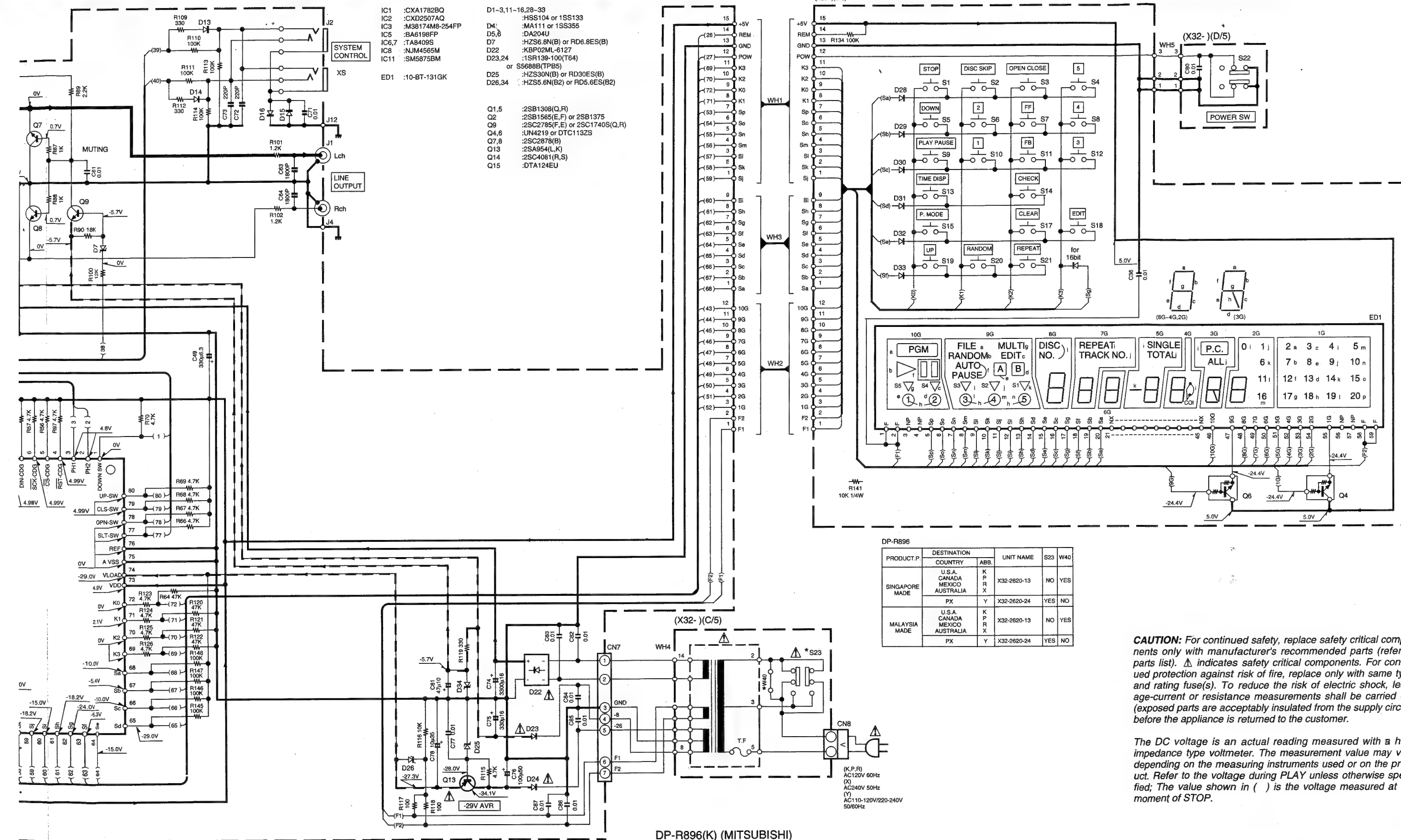


MECHA. ASSY (CDM-25)

(X92-1930-10/X92-1960-31)







**CAUTION:** For continued safety, replace safety critical components only with manufacturer's recommended parts (refer to parts list).  $\Delta$  indicates safety critical components. For continued protection against risk of fire, replace only with same type and rating fuse(s). To reduce the risk of electric shock, leakage-current or resistance measurements shall be carried out (exposed parts are acceptably insulated from the supply circuit) before the appliance is returned to the customer.

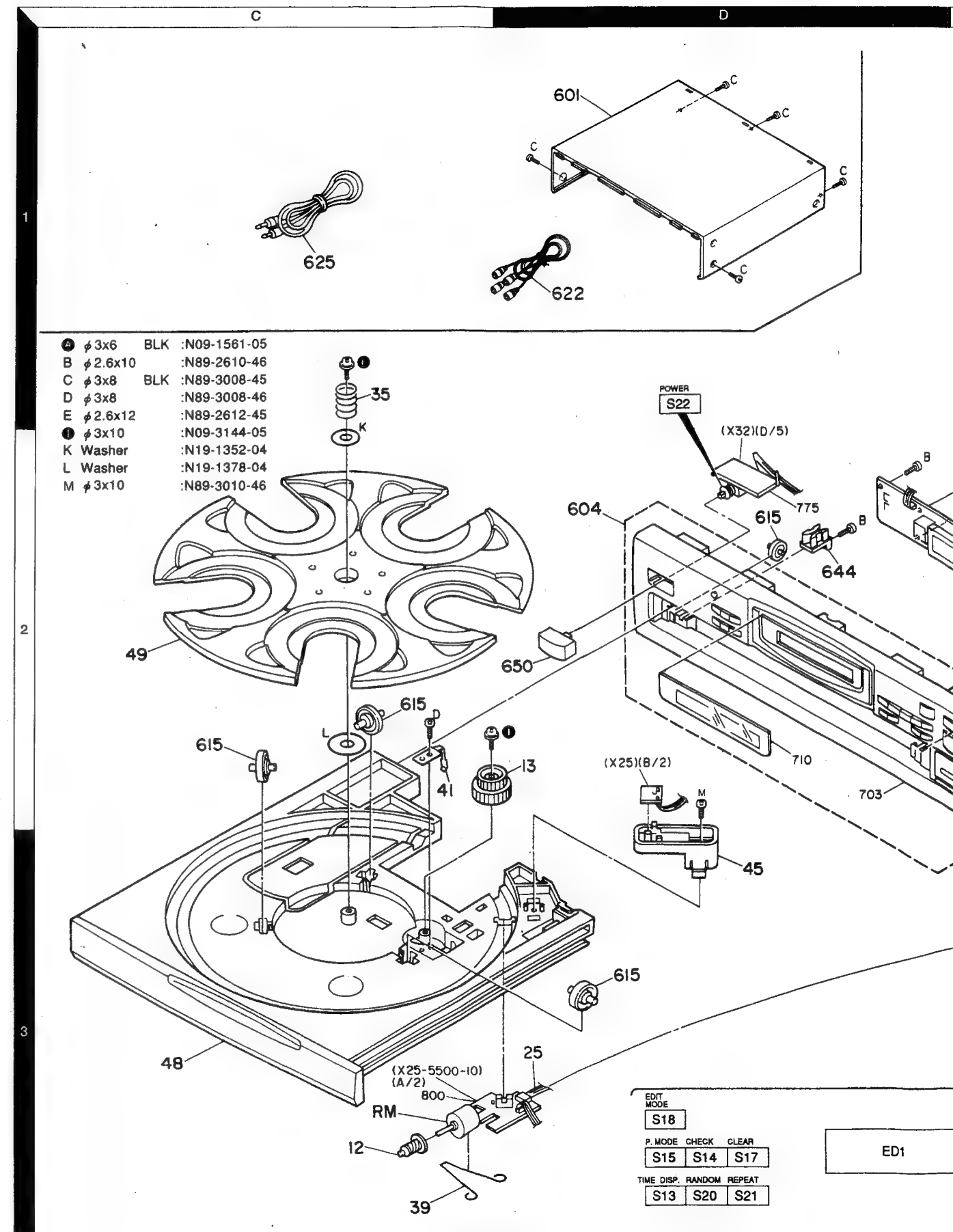
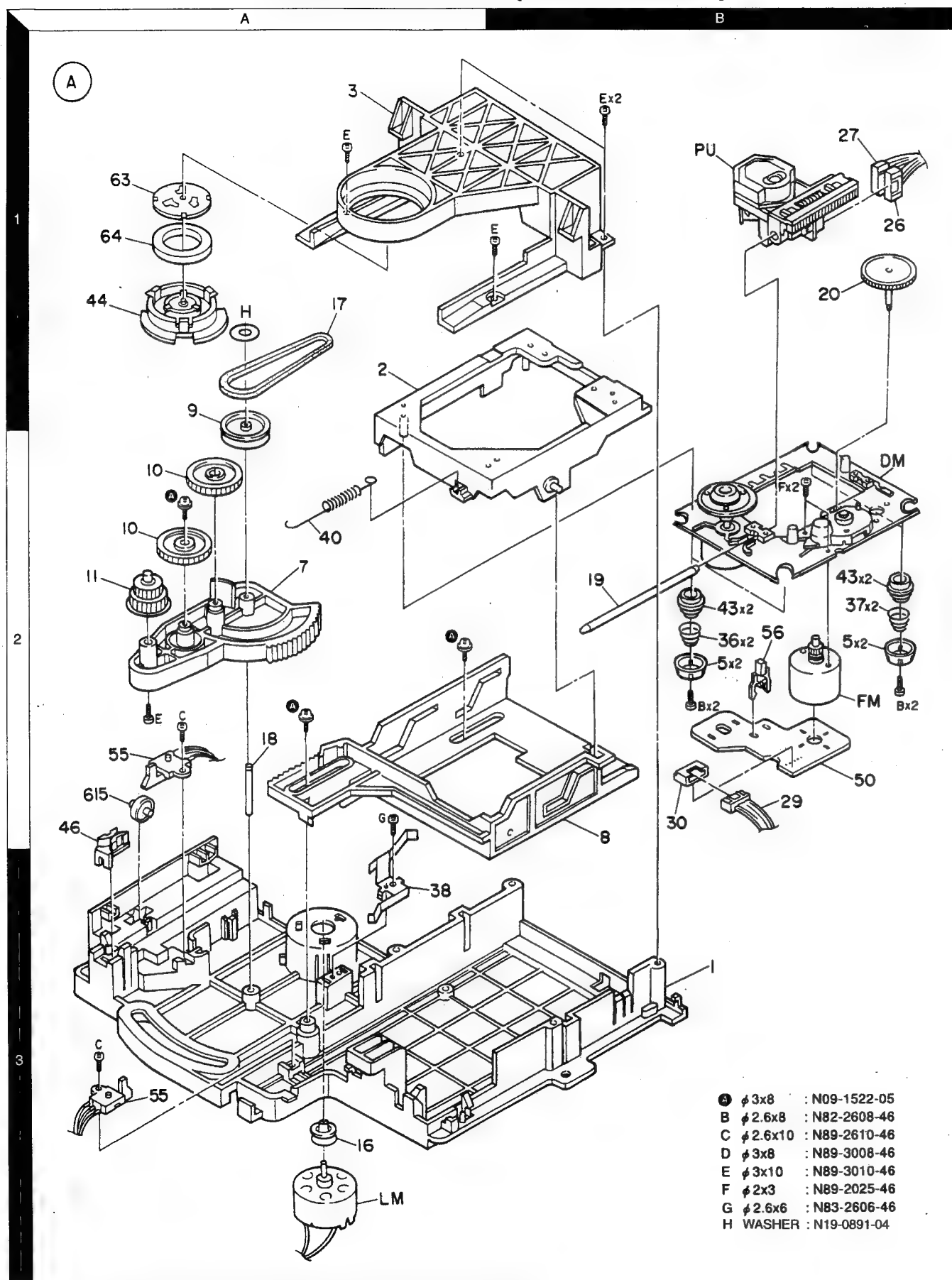
The DC voltage is an actual reading measured with a high impedance type voltmeter. The measurement value may vary depending on the measuring instruments used or on the product. Refer to the voltage during PLAY unless otherwise specified; The value shown in ( ) is the voltage measured at the moment of STOP.

**DP-R896**  
**KENWOOD**

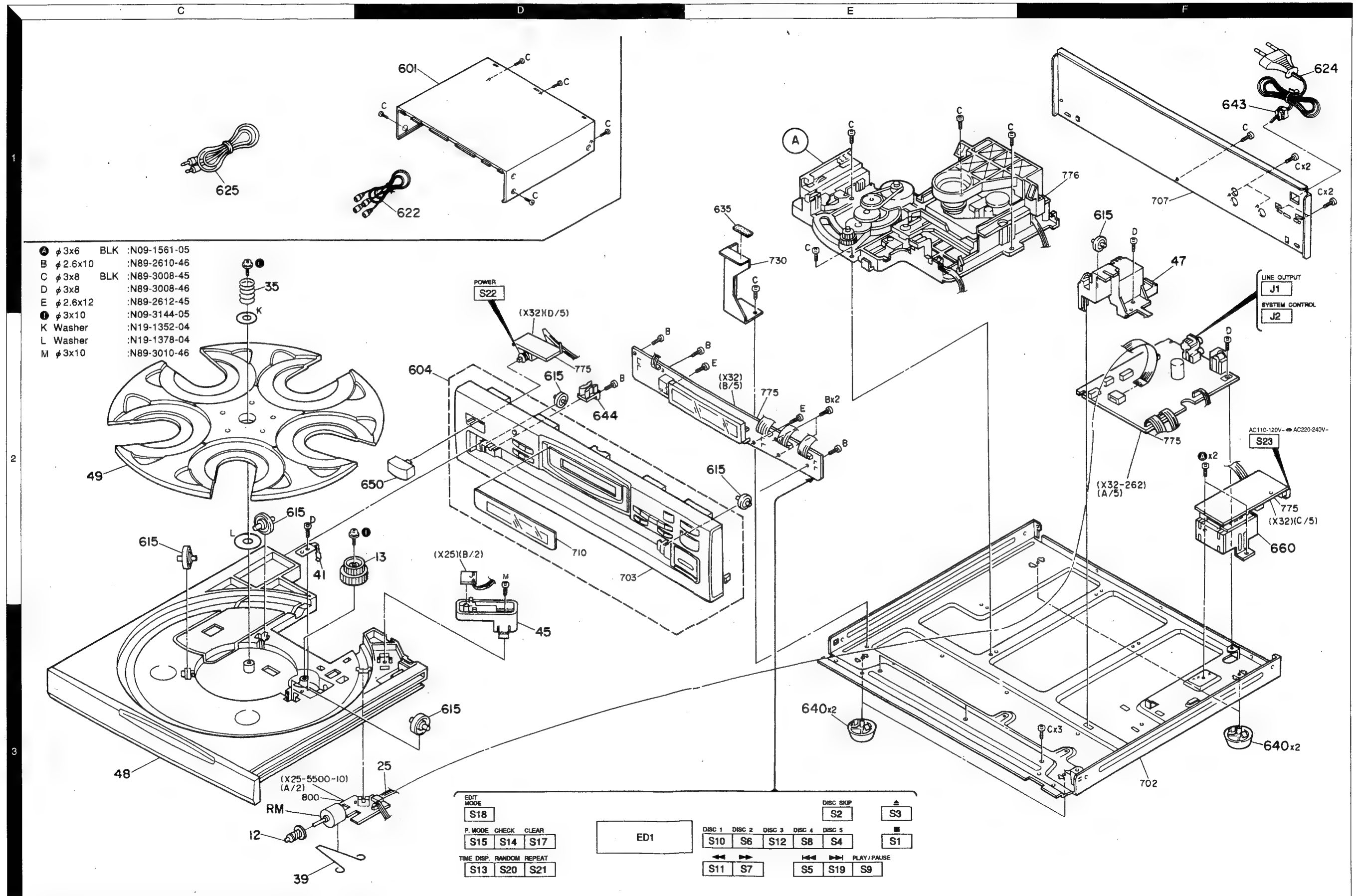
Y22-4450-10

## EXPLODED VIEW(MECHANISM)

## EXPLODED V



EXPLODED VIEW (UNIT)





\*New Parts  
Parts without **Parts No.** are not supplied.  
Les articles non mentionnés dans le **Parts No.** ne sont pas fournis.  
Teile ohne **Parts No.** werden nicht geliefert.

Ref. No	Add-ress	New Parts	Parts No.	Description	Desti-nation	Re-marks
<b>DP-R896</b>						
601 604	1D 2D	*	A01-3103-11 A60-0872-02	METALLIC CABINET PANEL ASSY		
		*	B46-0092-43 B46-0096-53 B46-0121-33 B46-0197-00 B58-0513-04	WARRANTY CARD WARRANTY CARD WARRANTY CARD QUESTIONNAIRE CARD CAUTION CARD(PRESET220-240)	KY X P K Y	
		*	B58-0964-13 B58-0965-13 B58-0967-03 B58-1505-03 B59-1104-00	CAUTION CARD(UL) CAUTION CARD(TX TYPE PL) CAUTION CARD(P TYPE PL) CAUTION CARD SERVICE DIRECTORY	KY X P K Y	
		*	B60-2539-00 B60-2540-00	INSTRUCTION MANUAL (EN) INSTRUCTION MANUAL (FR)	PYX P	
615	2D,2E		D14-0357-04	ROLLER		
622 624 624 624 625	1D 1F 1F 1F 1C		E30-0505-05 E30-2605-05 E30-2650-05 E30-2717-05 E30-2735-05	AUDIO CORD AC POWER CORD AC POWER CORD AC POWER CORD CORD WITH PLUG	Y KP X	
635	1E		G11-2199-04	CUSHION		
		*	H10-5688-02 H10-5689-12 H10-5753-02 H10-5754-12 H12-2210-04	POLYSTYRENE FOAMED FIXTURE (L) POLYSTYRENE FOAMED FIXTURE (R) POLYSTYRENE FOAMED FIXTURE (L) POLYSTYRENE FOAMED FIXTURE (R) PACKING FIXTURE		S S W W
		*	H13-0152-14 H21-0303-04 H25-0232-04 H25-0368-04 H50-1795-04	CARTON BOARD PROTECTION SHEET PROTECTION BAG (235X350X0.03) PROTECTION BAG ITEM CARTON CASE	X	W
		*	H50-1936-04	ITEM CARTON CASE		S
640 643 644	3E,3F 1F 2D		J02-0366-15 J42-0083-05 J90-0811-04 J61-0307-05	FOOT POWER CORD BUSHING GUIDE WIRE BAND	YX	
650	2D		K27-2112-04	KNOB (POWER)		
660 660 660	2F 2F 2F		L07-0858-05 L07-0859-05 L07-0860-05	POWER TRANSFORMER POWER TRANSFORMER POWER TRANSFORMER	KP Y X	
<b>MECHANISM PCB (X25-5500-10)</b>						
CN1			E40-4187-05	FLAT CABLE CONNECTOR		
PH1			T95-0132-05	OPTO ISOLATOR		
D1 PH2			SIR-33ST3 RPT-38PT3F	INFRARED LED PHOTO TRANSISTOR		
<b>CD PLAYER UNIT (X32-2620-XX)</b>						
C1			CK73FB1H103K	CHIP C 0.010UF K		

L : Scandinavia K : USA P : Canada R : Mexico S : Singapore made  
Y : PX(Far East, Hawaii) T : Europe E : Europe G : Germany W : Malaysia made  
Y : AAFES(Europe) X : Australia M : Other Areas  $\Delta$  indicates safety critical components.

\*New Parts  
Parts without **Parts No.** are not supplied.  
Les articles non mentionnés dans le **Parts No.** ne sont pas fournis.  
Teile ohne **Parts No.** werden nicht geliefert.

Ref. No	Add-ress	New Parts	Parts No.	Description	Desti-nation	Re-marks
C2 C3 C4 C5 C6			CK73FB1H472K CC73FSL1H470J CK73FF1C474Z CE04LW1A101M CK73FB1E104K	CHIP C CHIP C CHIP C ELECTRO CHIP C	4700PF 47PF 0.47UF 100UF 0.10UF	K J Z 10WV K
C7 C8 C9 C10 C11			CE04HW1HR47M CK73FB1E104K CK73FB1H102K CC73FSL1H221J CK73FB1H333K	NP-ELEC CHIP C CHIP C CHIP C CHIP C	0.47UF 0.10UF 1000PF 220PF 0.033UF	50WV K K J K
C12 C13,14 C15 C16 C17,18			CC73FSL1H101J CE04HW1E100M CK73FB1H103K CK73FB1H333K CK73FB1H103K	CHIP C NP-ELEC CHIP C CHIP C CHIP C	100PF 10UF 0.010UF 0.033UF 0.010UF	J 25WV K K K
C19 C20 C21,22 C25 C26,27			CE04LW0J331M CK73FB1H103K CC73FSL1H150J CE04LW1A470M CE04LW1A101M	ELECTRO CHIP C CHIP C ELECTRO ELECTRO	330UF 0.010UF 15PF 47UF 100UF	6.3WV K J 10WV 10WV
C28 C29 C30 C31 C32			CC73FSL1H330J CK73FB1H222K CK73FB1H333K CK73FB1H103K CK73FB1H222K	CHIP C CHIP C CHIP C CHIP C CHIP C	33PF 2200PF 0.033UF 0.010UF 2200PF	J K K K K
C33 C34 C35 C36 C37			CE04LW1A101M CE04LW1H010M CK73FB1H102K CK73FB1H103K CK73FB1H473K	ELECTRO ELECTRO CHIP C CHIP C CHIP C	100UF 1.0UF 1000PF 0.010UF 0.047UF	10WV 50WV K K K
C38 C39 C40 C41 C42			CK73FB1H152K CK73FB1H103K CE04LW1HR47M CK73FB1H103K CE04LW0J331M	CHIP C CHIP C ELECTRO CHIP C ELECTRO	1500PF 0.010UF 0.47UF 0.010UF 330UF	K K 50WV K 6.3WV
C43 C44 C45,46 C47,48 C49			CK73FB1H103K CE04LW1A101M CK73FB1E104K CE04LW1A101M CE04LW0J331M	CHIP C ELECTRO CHIP C ELECTRO ELECTRO	0.010UF 100UF 0.10UF 100UF 330UF	K 10WV K 10WV 6.3WV
C51,52 C55-58 C59,60 C61,62 C63,64			CK73FB1H103K C93-0028-05 CE04LW1V100M CK73FB1H103K C93-0029-05	CHIP C CERAMIC CAPACITOR (TYPE 1) ELECTRO CHIP C CERAMIC CAPACITOR (TYPE 1)	0.010UF 10UF 0.010UF 0.010UF	K 35WV K K
C71 C72,73 C74 C75 C76			CK73FB1H103K CC73FSL1H221J CE04LW1C332M CE04LW1C331M CE04LW1H101M	CHIP C CHIP C ELECTRO ELECTRO ELECTRO	0.010UF 220PF 3300UF 330UF 100UF	K J 16WV 16WV 50WV
C77 C78 C80 C81 C82-87			CK73FB1H103K CE04LW1V100M CK73FB1H103K CE04LW1A470M CK73FB1H103K	CHIP C ELECTRO CHIP C ELECTRO CHIP C	0.010UF 10UF 0.010UF 47UF 0.010UF	K 35WV K 10WV K

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C88 C89 C90 C95 C96			CK73FF1C224Z CK73FB1H332K CK73FB1H473K CC73FSL1H220J CK73FB1H103K	CHIP C CHIP C CHIP C CHIP C CHIP C	0.22UF 3300PF 0.047UF 22PF 0.010UF	Z K K J K
C98 C99			CK73FB1E104K CK45FB1H102K	CHIP C CERAMIC	0.10UF 1000PF	K K
CN1,2 CN3 CN4 CN5 CN6			E40-3252-05 E40-0711-05 E40-3250-05 E40-3252-05 E40-4187-05	PIN ASSY PIN ASSY PIN ASSY PIN ASSY FLAT CABLE CONNECTOR		
CN7 CN8 J1 J2			E40-4297-05 E40-4245-05 E63-0068-15 E11-0188-05	FLAT CABLE CONNECTOR PIN ASSY PHONO JACK(2P) LINE OUTPUT MINIATURE PHONE JACK(2P)S.CONT		
L1 X1 X2			J11-0098-05 L40-1001-17 L78-0299-05 L78-0602-05	WIRE CLAMPER SMALL FIXED INDUCTOR(10UH,K) RESONATOR (16.93M) RESONATOR (6.300M)		M
R1 R2 R3 R4 R5			RK73FB2A910J RK73FB2A102J RK73FB2A101J RK73FB2A334J RK73FB2A203J	CHIP R CHIP R CHIP R CHIP R CHIP R	91 1.0K 100 330K 20K	J 1/10W J 1/10W J 1/10W J 1/10W J 1/10W
R6 R7 R8 R10 R11			RK73FB2A334J RK73FB2A473J RK73FB2A154J RK73FB2A101J RK73FB2A684J	CHIP R CHIP R CHIP R CHIP R CHIP R	330K 47K 150K 100 680K	J 1/10W J 1/10W J 1/10W J 1/10W J 1/10W
R12 R13 R14 R15 R16			RK73FB2A103J RK73FB2A105J RK73FB2A124J RK73FB2A105J RK73FB2A823J	CHIP R CHIP R CHIP R CHIP R CHIP R	10K 1.0M 120K 1.0M 82K	J 1/10W J 1/10W J 1/10W J 1/10W J 1/10W
R17 R18 R19 R20 R21			RK73FB2A104J RK73FB2A223J RK73FB2A183J RK73FB2A514J RK73FB2A104J	CHIP R CHIP R CHIP R CHIP R CHIP R	100K 22K 18K 510K 100K	J 1/10W J 1/10W J 1/10W J 1/10W J 1/10W
R22 R23,24 R25 R26 R27			RK73FB2A244J RK73FB2A471J RK73FB2A472J RK73FB2A332J RK73FB2A103J	CHIP R CHIP R CHIP R CHIP R CHIP R	240K 470 4.7K 3.3K 10K	J 1/10W J 1/10W J 1/10W J 1/10W J 1/10W
R28 R29 R30 R31 R32			RK73FB2A513J RK73FB2A100J RK73FB2A162J RK73FB2A243J RK73FB2A392J	CHIP R CHIP R CHIP R CHIP R CHIP R	51K 10 1.6K 24K 3.9K	J 1/10W J 1/10W J 1/10W J 1/10W J 1/10W
R38 R39 R40			RK73FB2A103J RK73FB2A473J RK73FB2A472J	CHIP R CHIP R CHIP R	10K 47K 4.7K	J 1/10W J 1/10W J 1/10W

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R41 R42 R43 R44 R45			RK73FB2A332J RK73FB2A103J RK73FB2A332J RK73FB2A105J RK73FB2A104J	CHIP R CHIP R CHIP R CHIP R CHIP R	3.3K 10K 3.3K 1.0M 100K	J 1/10W J 1/10W J 1/10W J 1/10W J 1/10W
R46 R47 R47 R48 R49			RK73FB2A103J RK73FB2A102J RK73FB2A472J RK73FB2A105J RK73FB2A103J	CHIP R CHIP R CHIP R CHIP R CHIP R	10K 1.0K 4.7K 1.0M 10K	J 1/10W J 1/10W J 1/10W J 1/10W J 1/10W
R50 R51 R52 R53-57 R53-57			RK73FB2A181J RK73FB2A103J RK73FB2A181J RK73FB2A222J RK73FB2A472J	CHIP R CHIP R CHIP R CHIP R CHIP R	180 10K 180 2.2K 4.7K	J 1/10W J 1/10W J 1/10W J 1/10W J 1/10W
R60-62 R64 R66-70 R71,72 R73,74			RK73FB2A472J RK73FB2A473J RK73FB2A472J RK73FB2A133J RK73FB2A332J	CHIP R CHIP R CHIP R CHIP R CHIP R	4.7K 47K 4.7K 13K 3.3K	J 1/10W J 1/10W J 1/10W J 1/10W J 1/10W
R75,76 R77,78 R79,80 R83,84 R85,86			RK73FB2A103J RK73FB2A562J RK73FB2A103J RK73FB2A202J RK73FB2A104J	CHIP R CHIP R CHIP R CHIP R CHIP R	10K 5.6K 10K 2.0K 100K	J 1/10W J 1/10W J 1/10W J 1/10W J 1/10W
R87,88 R89 R90 R91 R92			RK73FB2A102J RK73FB2A222J RK73FB2A183J RK73FB2A104J RK73FB2A102J	CHIP R CHIP R CHIP R CHIP R CHIP R	1.0K 2.2K 18K 100K 1.0K	J 1/10W J 1/10W J 1/10W J 1/10W J 1/10W
R93 R94-96 R97 R97 R98			RK73FB2A470J RK73FB2A471J RK73FB2A222J RK73FB2A472J RK73FB2A472J	CHIP R CHIP R CHIP R CHIP R CHIP R	47 470 2.2K 4.7K 4.7K	J 1/10W J 1/10W J 1/10W J 1/10W J 1/10W
$\Delta$ R99 R100 R101,102 R109 R110,111			RS14KB3D820J RK73FB2A123J RK73FB2A122J RK73FB2A331J RK73FB2A104J	FL-PROOF RS CHIP R CHIP R CHIP R CHIP R	82 12K 1.2K 330 100K	J 2W J 1/10W J 1/10W J 1/10W J 1/10W
R112 R113,114 R115 R116 R117,118			RK73FB2A331J RK73FB2A104J RK73FB2A472J RK73FB2A103J RK73FB2A101J	CHIP R CHIP R CHIP R CHIP R CHIP R	330 100K 4.7K 10K 100	J 1/10W J 1/10W J 1/10W J 1/10W J 1/10W
R119 R120-122 R123-126 R127 R128			RK73FB2A331J RK73FB2A473J RK73FB2A472J RK73FB2A222J RK73FB2A102J	CHIP R CHIP R CHIP R CHIP R CHIP R	330 47K 4.7K 2.2K 1.0K	J 1/10W J 1/10W J 1/10W J 1/10W J 1/10W
R129 R130 R131 R132 R133			RK73FB2A105J RK73FB2A224J RK73FB2A912J RK73FB2A102J RK73FB2A203J	CHIP R CHIP R CHIP R CHIP R CHIP R	1.0M 220K 9.1K 1.0K 20K	J 1/10W J 1/10W J 1/10W J 1/10W J 1/10W

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C88			CK73FB1C224Z	CHIP C 0.22UF Z		
C89			CK73FB1H332K	CHIP C 3300PF K		
C90			CK73FB1H473K	CHIP C 0.047UF K		
C95			CC73FSL1H220J	CHIP C 22PF J		
C96			CK73FB1H103K	CHIP C 0.010UF K		M
C98			CK73FB1E104K	CHIP C 0.10UF K		
C99			CK45FB1H102K	CERAMIC 1000PF K		
CN1,2			E40-3252-05	PIN ASSY		
CN3			E40-0711-05	PIN ASSY		
CN4			E40-3250-05	PIN ASSY		
CN5			E40-3252-05	PIN ASSY		
CN6			E40-4187-05	FLAT CABLE CONNECTOR		
CN7			E40-4297-05	FLAT CABLE CONNECTOR		
CN8			E40-4245-05	PIN ASSY		
J1			E63-0068-15	PHONO JACK(2P) LINE OUTPUT		
J2			E11-0188-05	MINIATURE PHONE JACK(2P)S.CONT		
			J11-0098-05	WIRE CLAMPER		
L1			L40-1001-17	SMALL FIXED INDUCTOR(10UH,K)		
X1			L78-0299-05	RESONATOR (16.93M)		
X2			L78-0602-05	RESONATOR (6.300M)		M
R1			RK73FB2A910J	CHIP R 91 J 1/10W		
R2			RK73FB2A102J	CHIP R 1.0K J 1/10W		
R3			RK73FB2A101J	CHIP R 100 J 1/10W		
R4			RK73FB2A334J	CHIP R 330K J 1/10W		
R5			RK73FB2A203J	CHIP R 20K J 1/10W		
R6			RK73FB2A334J	CHIP R 330K J 1/10W		
R7			RK73FB2A473J	CHIP R 47K J 1/10W		
R8			RK73FB2A154J	CHIP R 150K J 1/10W		
R10			RK73FB2A101J	CHIP R 100 J 1/10W		
R11			RK73FB2A684J	CHIP R 680K J 1/10W		
R12			RK73FB2A103J	CHIP R 10K J 1/10W		
R13			RK73FB2A105J	CHIP R 1.0M J 1/10W		
R14			RK73FB2A124J	CHIP R 120K J 1/10W		
R15			RK73FB2A105J	CHIP R 1.0M J 1/10W		
R16			RK73FB2A823J	CHIP R 82K J 1/10W		
R17			RK73FB2A104J	CHIP R 100K J 1/10W		
R18			RK73FB2A223J	CHIP R 22K J 1/10W		
R19			RK73FB2A183J	CHIP R 18K J 1/10W		
R20			RK73FB2A514J	CHIP R 510K J 1/10W		
R21			RK73FB2A104J	CHIP R 100K J 1/10W		
R22			RK73FB2A244J	CHIP R 240K J 1/10W		
R23,24			RK73FB2A471J	CHIP R 470 J 1/10W		
R25			RK73FB2A472J	CHIP R 4.7K J 1/10W		
R26			RK73FB2A332J	CHIP R 3.3K J 1/10W		
R27			RK73FB2A103J	CHIP R 10K J 1/10W		
R28			RK73FB2A513J	CHIP R 51K J 1/10W		
R29			RK73FB2A100J	CHIP R 10 J 1/10W		
R30			RK73FB2A162J	CHIP R 1.6K J 1/10W		
R31			RK73FB2A243J	CHIP R 24K J 1/10W		
R32			RK73FB2A392J	CHIP R 3.9K J 1/10W		
R38			RK73FB2A103J	CHIP R 10K J 1/10W		
R39			RK73FB2A473J	CHIP R 47K J 1/10W		
R40			RK73FB2A472J	CHIP R 4.7K J 1/10W		

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R41			RK73FB2A332J	CHIP R 3.3K J 1/10W		
R42			RK73FB2A103J	CHIP R 10K J 1/10W		
R43			RK73FB2A332J	CHIP R 3.3K J 1/10W		
R44			RK73FB2A105J	CHIP R 1.0M J 1/10W		
R45			RK73FB2A104J	CHIP R 100K J 1/10W		
R46			RK73FB2A103J	CHIP R 10K J 1/10W		
R47			RK73FB2A102J	CHIP R 1.0K J 1/10W		
R47			RK73FB2A472J	CHIP R 4.7K J 1/10W		
R48			RK73FB2A105J	CHIP R 1.0M J 1/10W		
R49			RK73FB2A103J	CHIP R 10K J 1/10W		
R50			RK73FB2A181J	CHIP R 180 J 1/10W		
R51			RK73FB2A103J	CHIP R 10K J 1/10W		
R52			RK73FB2A181J	CHIP R 180 J 1/10W		
R53-57			RK73FB2A222J	CHIP R 2.2K J 1/10W		
R53-57			RK73FB2A472J	CHIP R 4.7K J 1/10W		
R60-62			RK73FB2A472J	CHIP R 4.7K J 1/10W		
R64			RK73FB2A473J	CHIP R 47K J 1/10W		
R66-70			RK73FB2A472J	CHIP R 4.7K J 1/10W		
R71,72			RK73FB2A133J	CHIP R 13K J 1/10W		
R73,74			RK73FB2A332J	CHIP R 3.3K J 1/10W		
R75,76			RK73FB2A103J	CHIP R 10K J 1/10W		
R77,78			RK73FB2A562J	CHIP R 5.6K J 1/10W		
R79,80			RK73FB2A103J	CHIP R 10K J 1/10W		
R83,84			RK73FB2A202J	CHIP R 2.0K J 1/10W		
R85,86			RK73FB2A104J	CHIP R 100K J 1/10W		
R87,88			RK73FB2A102J	CHIP R 1.0K J 1/10W		
R89			RK73FB2A222J	CHIP R 2.2K J 1/10W		
R90			RK73FB2A183J	CHIP R 18K J 1/10W		
R91			RK73FB2A104J	CHIP R 100K J 1/10W		
R92			RK73FB2A102J	CHIP R 1.0K J 1/10W		
R93			RK73FB2A470J	CHIP R 47 J 1/10W		
R94-96			RK73FB2A471J	CHIP R 470 J 1/10W		
R97			RK73FB2A222J	CHIP R 2.2K J 1/10W		
R97			RK73FB2A472J	CHIP R 4.7K J 1/10W		
R98			RK73FB2A472J	CHIP R 4.7K J 1/10W		
R99			RS14KB3D820J	FL-PROOF RS 82 J 2W		
R100			RK73FB2A123J	CHIP R 12K J 1/10W		
R101,102			RK73FB2A122J	CHIP R 1.2K J 1/10W		
R109			RK73FB2A331J	CHIP R 330 J 1/10W		
R110,111			RK73FB2A104J	CHIP R 100K J 1/10W		
R112			RK73FB2A331J	CHIP R 330 J 1/10W		
R113,114			RK73FB2A104J	CHIP R 100K J 1/10W		
R115			RK73FB2A472J	CHIP R 4.7K J 1/10W		
R116			RK73FB2A103J	CHIP R 10K J 1/10W		
R117,118			RK73FB2A101J	CHIP R 100 J 1/10W		
R119			RK73FB2A331J	CHIP R 330 J 1/10W		
R120-122			RK73FB2A473J	CHIP R 47K J 1/10W		
R123-126			RK73FB2A472J	CHIP R 4.7K J 1/10W		
R127			RK73FB2A222J	CHIP R 2.2K J 1/10W		
R128			RK73FB2A102J	CHIP R 1.0K J 1/10W		
R129			RK73FB2A105J	CHIP R 1.0M J 1/10W		
R130			RK73FB2A224J	CHIP R 220K J 1/10W		
R131			RK73FB2A912J	CHIP R 9.1K J 1/10W		
R132			RK73FB2A102J	CHIP R 1.0K J 1/10W		
R133			RK73FB2A203J	CHIP R 20K J 1/10W		

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R134			RK73FB2A104J	CHIP R 100K J 1/10W		
R135			RK73FB2A752J	CHIP R 7.5K J 1/10W		
R136			RK73FB2A123J	CHIP R 12K J 1/10W		
R137			RK73FB2A103J	CHIP R 10K J 1/10W		
R138			RK73FB2A124J	CHIP R 120K J 1/10W		
R139			RK73FB2A394J	CHIP R 390K J 1/10W		
R142-144			RK73FB2A472J	CHIP R 4.7K J 1/10W		
R145-148			RK73FB2A104J	CHIP R 100K J 1/10W		
VR1			R12-3687-05	TRIMMING POT.(33K)		
VR2			R12-3685-05	TRIMMING POT.(10K)		
VR3			R12-3688-05	TRIMMING POT.(47K)		
VR4			R12-3685-05	TRIMMING POT.(10K)		
W151			R92-0670-05	CHIP R 0 OHM		
W152-154			R92-0670-05	CHIP R 0 OHM		
S1-15			S40-1064-05	PUSH SWITCH		
S17-21			S40-1064-05	PUSH SWITCH		
S22			S40-2370-05	PUSH SWITCH (POWER)		
S23			S31-2131-05	SLIDE SWITCH (AC VOLTAGE SEL)		
D1-3			HSS104	DIODE		
D1-3			1SS133	DIODE		
D4			MA111	DIODE		
D4			1SS355	DIODE		
D5,6			DA204U	DIODE		
D7			HZS6.8N(B2)	ZENER DIODE		
D7			RD6.8ES(B2)	ZENER DIODE		
D11-16			HSS104	DIODE		
D11-16			1SS133	DIODE		
D22			KBP02ML-6127	DIODE		
D23,24			S5688B(TPB5)	DIODE		
D23,24			1SR139-100(T64	DIODE		
D25			HZS30N(B)	ZENER DIODE		
D25			RD30ES(B)	ZENER DIODE		
D26			HZS5.6N(B2)	ZENER DIODE		
D26			RD5.6ES(B2)	ZENER DIODE		
D28-33			HSS104	DIODE		
D28-33			1SS133	DIODE		
D34			HZS5.6N(B2)	ZENER DIODE		
D34			RD5.6ES(B2)	ZENER DIODE		
ED1			10-BT-131GK	INDICATOR TUBE		
IC1			CXA1782BQ	MOS-IC		
IC2			CXD2507AQ	MOS-IC		
IC3			M38174M8-254FP	MEMORY IC (MITSUBISHI TYPE)		
IC3			UPD78043GF-068	MEMORY IC (NEC TYPE)		
IC5			BA6198FP	ANALOGUE IC		
IC6,7			TA8409S	IC(MOTOR CONTROL)		
IC8			NJM4565M	IC(OP AMP X2)		
IC11			SM5875BM	MOS-IC		
Q1			2SB1308(Q,R)	TRANSISTOR		
Q2			2SB1375	TRANSISTOR		
Q2			2SB1565(E,F)	TRANSISTOR		
Q4			DTC113ZS	DIGITAL TRANSISTOR		
Q4			UN4219	TRANSISTOR		
Q5			2SB1308(Q,R)	TRANSISTOR		
Q6			DTC113ZS	DIGITAL TRANSISTOR		
Q6			UN4219	TRANSISTOR		

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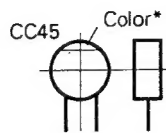
Ref. No	Add-ress	New Parts	Parts No.	Description	Desti-nation	Re-marks
Q7,8 Q9 Q9 Q13			2SC2878(B) 2SC1740S(Q,R) 2SC2785(F,E) 2SA954(L,K)	TRANSISTOR TRANSISTOR TRANSISTOR TRANSISTOR		
Q14 Q15			2SC4081(R,S) DTA124EU	TRANSISTOR DIGITAL TRANSISTOR		
MECHANISM (X92-1930-10/X92-1960-31)						
1 2 3 DM	3B 1A 1A 2B	*	A10-3121-42 A11-1048-12 A11-1017-22 A11-1082-08	CHASSIS ASSY SUB CHASSIS SUB CHASSIS TT CHASSIS ASSY		
5	2B		B09-0250-04	CAP		
7 8 9 10 11	2A 2B 1A 2A 2A		D10-3439-13 D10-3438-12 D13-1577-14 D13-1578-04 D13-1579-04	ARM SLIDER GEAR GEAR GEAR		
12 13 16 17 18	3C 2D 3A 1A 2A		D13-1682-04 D13-1581-04 D15-0359-04 D16-0355-03 D21-1763-04	WORM GEAR PULLEY BELT SHAFT		
19 20	2B 1B		D10-3606-08 D13-1720-08	FEED SHAFT GEAR (A)		
25 26 27 29 30	3D 1B 1B 2B 2B		E35-0747-25 E35-0748-15 E35-0749-15 E35-0751-15 E40-3264-05	FLAT CABLE WIRING HARNESS WIRING HARNESS WIRING HARNESS CONNECTOR (6P)		
35 36 37 38 39	1C 2B 2B 3A 3C		G01-3630-14 G01-3753-04 G01-3754-04 G02-1049-04 G09-0634-04	COMPRESSION SPRING COMPRESSION SPRING (FRONT) COMPRESSION SPRING (REAR) FLAT SPRING WIRE SPRING		
40 41	2A 2C		G01-3697-24 G02-1065-04	EXTENSION SPRING FLAT SPRING		
43 44 45 46 47	2B 1A 3D 2A 1F		J02-1121-04 J11-0198-03 J19-3634-04 J90-0811-04 J90-0810-22	INSULATOR CLAMPER HOLDER GUIDE GUIDE		
48 48 49 50	3C 3C 2C 2B		J99-0568-11 J99-0569-01 J99-0547-01 J70-0827-08	TRAY TRAY TRAY MOTOR PCB		
55 56	2A,3A 2B		S33-2061-05 S74-0038-08	LEVER SWITCH LEAF SWITCH		
63 64 FM LM PU RM	1A 1A 2B 3A 1B 3C		T50-1055-04 T99-0544-15 T42-0817-08 T42-0524-05 T25-0044-08 T42-0670-05	YOKE MAGNET MOTOR GEAR (FEED) DC MOTOR (LOADING) PICKUP (KSS-212A) DC MOTOR (TRAY-ROTARY)		

## PARTS DESCRIPTIONS

### CAPACITORS

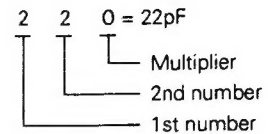
CC 45 TH 1H 220 J  
1 2 3 4 5 6

- 1 = Type ... ceramic, electrolytic, etc. 4 = Voltage rating  
2 = Shape ... round, square, ect. 5 = Value  
3 = Temp. coefficient 6 = Tolerance



#### Capacitor value

- 010 = 1pF  
100 = 10pF  
101 = 100pF  
102 = 1000pF = 0.001μF  
103 = 0.01μF



#### Temperature coefficient

1st Word	C	L	P	R	S	T	U
Color*	Black	Red	Orange	Yellow	Green	Blue	Violet
ppm/°C	0	-80	-150	-220	-330	-470	-750

2nd Word	G	H	J	K	L
ppm/°C	±30	±60	±120	±250	±500

Example : CC45TH = -470 ± 60ppm/°C

#### Tolerance (More than 10pF)

Code	C	D	G	J	K	M	X	Z	P	No code
(%)	±0.25	±0.5	±2	±5	±10	±20	+40 -20	+80 -20	+100 -0	More than 10μF -10 ~ +50 Less than 4.7μF -10 ~ +75

#### (Less than 10pF)

Code	B	C	D	F	G
(pF)	±0.1	±0.25	±0.5	±1	±2

#### Voltage rating

2nd word	A	B	C	D	E	F	G	H	J	K	V
1st word											
0	1.0	1.25	1.6	2.0	2.5	3.15	4.0	5.0	6.3	8.0	-
1	10	12.5	16	20	25	31.5	40	50	63	80	35
2	100	125	160	200	250	315	400	500	630	800	-
3	1000	1250	1600	2000	2500	3150	4000	5000	6300	8000	-

#### Chip capacitors

- (EX) C C 7 3 F S L 1 H 0 0 0 J  
1 2 3 4 5 6 7  
(Chip) (CH, RH, UJ, SL)
- (EX) C K 7 3 F F 1 H 0 0 0 Z  
1 2 3 4 5 6 7  
(Chip) (B, F)
- Refer to the table above.
- 1 = Type  
2 = Shape  
3 = Dimension  
4 = Temp. coefficient  
5 = Voltage rating  
6 = Value  
7 = Tolerance

#### Dimension (Chip capacitors)

Dimension code	L	W	T
Empty	5.6 ± 0.5	5.0 ± 0.5	Less than 2.0
A	4.5 ± 0.5	3.2 ± 0.4	Less than 2.0
B	4.5 ± 0.5	2.0 ± 0.3	Less than 2.0
C	4.5 ± 0.5	1.25 ± 0.2	Less than 1.25
D	3.2 ± 0.4	2.5 ± 0.3	Less than 1.5
E	3.2 ± 0.2	1.6 ± 0.2	Less than 1.25
F	2.0 ± 0.3	1.25 ± 0.2	Less than 1.25
G	1.6 ± 0.2	0.8 ± 0.2	Less than 1.0

### RESISTORS

#### Chip resistor (Carbon)

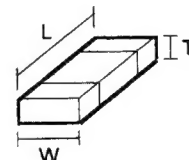
- (EX) R K 7 3 E B 2 B 0 0 0 J  
1 2 3 4 5 6 7  
(Chip) (B, F)

#### Carbon resistor (Normal type)

- (EX) R D 1 4 B B 2 C 0 0 0 J  
1 2 3 4 5 6 7

- 1 = Type 5 = Rating wattage  
2 = Shape 6 = Value  
3 = Dimension 7 = Tolerance  
4 = Temp. coefficient

#### Dimension



#### Dimension (Chip resistor)

Dimension code	L	W	T
E	3.2 ± 0.2	1.6 ± 0.2	1.0
F	2.0 ± 0.3	1.25 ± 0.2	1.0
G	1.6 ± 0.2	0.8 ± 0.2	0.5 ± 0.1

#### Rating wattage

Code	Wattage	Code	Wattage	Code	Wattage
1J	1/16W	2C	1/6W	3A	1W
2A	1/10W	2E	1/4W	3D	2W
2B	1/8W	2H	1/2W		

# DP-R896

## SPECIFICATIONS

### Format

System ..... Compact disc digital audio system  
Laser ..... Semiconductor laser  
Number of channels ..... 2 channels  
Playing rotation ..... 200 rpm ~ 500 rpm (CLV)

### D/A converters

D/A conversion ..... 1 bit  
Oversampling ..... 8 fs (352.8 kHz)

### Audio

Frequency response ..... 4 Hz ~ 20 kHz,  $\pm 1.0$  dB  
Signal to noise ratio ..... More than 96 dB  
Dynamic range ..... More than 94 dB  
Total harmonic distortion + noise  
..... Less than 0.007 % (at 1 kHz)

Channel separation ..... More than 90 dB (at 1 kHz)  
Wow flutter ..... Unmeasurable limit  
Output level / impedance  
Fixed ..... 2.0 V / 3.3 k  $\Omega$

### General

Power consumption ..... 10 W  
Dimensions ..... W : 440 mm (17-5/16")  
H : 128 mm (5-1/16")  
D : 392 mm (15-7/16")  
Weight (Net) ..... 5.0 kg (11.0 lb)

KENWOOD follows a policy of continuous advancements in development. For this reason specifications may be changed without notice.

### Note:

Component and circuitry are subject to modification to insure best operation under differing local conditions. This manual is based on the U.S.A.(K) standard, and provides information on regional circuit modification through use of alternate schematic diagrams, and information on regional component variations through use of parts list.

## KENWOOD CORPORATION

14-6, Dogenzaka 1-chome, Shibuya-ku, Tokyo, 150 Japan

### KENWOOD SERVICE CORPORATION

P.O. BOX 22745, 2201 East Dominguez St., Long Beach, CA 90801-5745, U.S.A.

### KENWOOD ELECTRONICS CANADA INC.

6070 Kestrel Road, Mississauga, Ontario, Canada L5T 1S8

### KENWOOD ELECTRONICS LATIN AMERICA S.A.

P.O. BOX 55-2791, Piso 6 plaza Chase, Cl. 47 y Aquilino de la Guardia Panama, Republic de Panama

### TRIO-KENWOOD U.K. LIMITED

KENWOOD House, Dwight Road, Watford, Herts., WD1 8EB., United Kingdom

### KENWOOD ELECTRONICS BENELUX N.V.

Meachelsesteenweg 418, B-1930 Zaventem, Belgium

### KENWOOD ELECTRONICS DEUTSCHLAND GMBH

Rembrücker Str. 15, 63150 Heusenstamm, Germany

### TRIO-KENWOOD FRANCE S.A.

13 Boulevard Ney, 75018 Paris, France

### KENWOOD ELECTRONICS ITALIA S.p.A.

Via G. Sirtori, 7/9 20129, Milano, Italy

### KENWOOD IBERICA S.A.

Bolivia, 239-08020 Barcelona, Spain

### KENWOOD ELECTRONICS AUSTRALIA PTY. LTD. (A.C.N. 001499 074)

P.O. Box 504, 8 Figtree Drive, Australia Centre, Homebush, N.S.W. 2140, Australia

### KENWOOD & LEE ELECTRONICS, LTD.

Unit 3712-3724, Level 37, Tower 1, Metroplaza, 223 Hing Fong Road, Kwai Fong N.T., Hong Kong

### KENWOOD ELECTRONICS SINGAPORE PTE LTD.

No. 1 Genting Lane # 07-00, KENWOOD Building, Singapore, 1334

### KENWOOD ELECTRONICS (MALAYSIA) SDN BHD

10th Floor, Block B, Wisma Semantan, No. 12 Jalan Gelenggang, Bukit Damansara, 50490 Kuala Lumpur, Malaysia